

REMARKS

In response to the office action dated 10/27/2009, Applicant herewith elects the **method claims 11-17 and Figs. 6a-6b, with claims 16 to 17 drawn to these Figures,** for further prosecution **with traverse.**

The decisive feature of the present invention is that during roll forming a counterforce relative to a flow direction of the starting material is generated so that a material flow in at least one of an axial direction and a radial direction of the starting material is controlled **such that flowing material is integrated into a profile to be shaped on the ring.** This feature is disclosed in claim 11 and also amended claim 18.

The invention is realized (see specification, paragraph bridging pages 10 and 11) in that a counterpressure device - including rolling arbor - is provided for generating a counterpressure applied in a defined fashion e.g. by an additionally integrated hydraulic and/or mechanical system. This additional system is shown in Fig. 8 as a hydraulic system. Depending on the pressure of the hydraulic medium 9 in the hydraulic cylinder 8, the hydraulic piston 7 actuated by the hydraulic medium together with the counterpressure tool 5 can cause reduction or reversal of the axial material flow toward the pipe end in the direction toward the clamping location. At the same time, a radial material flow to the outer diameter is enabled. By properly selecting the hydraulic pressure that can be changed during the rolling process the required precision with regard to dimensional compliance, in particular symmetry, of the groove-like profiles is ensured and the flowing material is incorporated into the profile of the ring to be shaped.

As set forth in the specification, page 5, 4th paragraph, the use of such a counterpressure device (including rolling arbor) leads to a significant broadening of the known method combination axial pipe roll forming (and/or roll grooving) - turning toward a complete novel method combination that is described as "radial-axial pipe roll forming" and/or "roll grooving - turning". This method combination provides controllable axial material flow and achieves that from a pipe having a "smaller" outer diameter rings with (slightly) greater outer diameter can be produced. This is so because of the radial material flow (toward the outer pipe diameter) that can now be controlled in a targeted way. The radial-axial pipe roll forming process provides manufacturing possibilities for producing a significantly broader spectrum of parts in comparison with known methods.

Applicant respectfully submits that the cited reference *DE 195 26 900* only discloses a rolling tool 12 and an arbor 5 that are moved radially relative to one another such that a boxed groove (defined groove shape) results. The radial movement causes material displacement during the rolling step between the tool 12 and the arbor 5 and the material flows freely in the axial direction as shown in Fig. 2 of *DE 195 26 900*. The flow of material, as in any rolling process, is determined by the tool geometry and the tool movement, but this has nothing in common with controlling the flow of material radially and/or axially in order to incorporate the material into the profiled ring. A targeted controlled flow of the material by means of a counterforce is not disclosed in the cited reference as the excess material of the annular blank is simply displaced in the axial direction by the radial advancement of the tool and the arbor.

Therefore, it is believed that the restriction requirement is unfounded as the common feature resides in the counterforce being generated during roll forming relative to a flow direction of the starting material so that a material flow in at least one of an axial direction and a radial direction of the starting material is controlled such that flowing material is integrated into a profile to be shaped on the ring and such a measure is not anticipated by or obvious in view of *DE 195 26 900*.

Reconsideration and withdrawal of the restriction requirement are therefore respectfully requested.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on December 28, 2009,

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